



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/510,151

05/30/2006

Kia Silverbrook

YU181US

6653

24011 7590 03/13/2008
SILVERBROOK RESEARCH PTY LTD
393 DARLING STREET
BALMAIN, 2041
AUSTRALIA

EXAMINER

HUFFMAN, JULIAN D

ART UNIT

PAPER NUMBER

2853

MAIL DATE

DELIVERY MODE

03/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/510,151	Applicant(s) SILVERBROOK, KIA	
	Examiner Julian D. Huffman	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 4-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,679,584 B2 in view of Oda (JP 3-147900).

Claims 1-16 of the patent clearly recite all of the limitations found in claims 4-20 of the application with the exception of a feed mechanism positioned on the support structure for feeding a print medium through the printing zone, the feed mechanism including a media roll for carrying print media to be provided to the printing zone and a take up spool configured to receive printed print media from the printing zone, wherein

Art Unit: 2853

the feed mechanism is positioned on the support structure so that the take up spool is located beneath the media roll, wherein the feed mechanism is positioned on the support structure so that the media roll is located between the take up spool and the carrier.

It would have been obvious to one having ordinary skill in the art at the time of the invention to provide the media feed mechanism and support structure of Oda to support the print head structure of the invention claimed in the patent for the purpose of enabling feed of a roll paper while preventing the paper from being caught in a roller (abstract) and to further provide a media tray for storage between the legs of the support structure so as to provide a way to store media conveniently in the printer housing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (U.S. 6,467,870 B2) in view of Oda (JP 3-147900).

Matsumoto et al. discloses :

With regards to claims 1-3, a method of pagewidth printing, the method comprising the steps of:

feeding a print medium through a printing zone; and
ejecting drops of ink at a rate from a print assembly on to the print medium in the printing zone to generate an image on the print medium.

With regards to claim 4, a print assembly for pagewidth inkjet printing, the print assembly comprising

an elongate carrier (14) that is mountable on a support structure of a printer in an operative position with respect to a platen of the printer;

a number of printhead chips (22) that are positioned on the carrier, the printhead chips together defining a printhead that is configured to eject drops into a printing zone defined between the printhead and the platen of the printer; and

control circuitry that is also positioned on the carrier and that is configured to control operation of the printhead chips (fig. 2, element 38, column 7, lines 28-31 and 41-45).

With regards to claim 10, this limitation does not further limit the structure of the claimed device.

With regards to claim 16, an inkjet printer that comprises
a support structure;
a platen positioned in the support structure (column 1, lines 12-22);
a print assembly positioned operatively with respect to the platen, the print assembly comprising an elongate carrier (14);

a number of printhead chips (22) positioned on the carrier, the printhead chips together defining a printhead that is configured to eject drops into a printing zone defined between the printhead and the platen; and

control circuitry that is also positioned on the carrier and that is configured to control operation of the printhead chips (fig. 2, element 38, column 7, lines 28-31 and 41-45); and

a feed mechanism positioned on the support structure for feeding a print medium through the printing zone (column 7, lines 46-51).

With regards to claim 20, each printhead device includes one or more MEMS.

Matsumoto et al. disclose that the number of head chips is not limited (column 6, lines 23-26).

Matsumoto et al. disclose CMOS driver circuitry on each printhead chip which functions as control circuitry for ejecting all of the nozzles to achieve page width printing (fig. 2, element 38, column 7, lines 28-31 and 41-45).

Matsumoto et al. does not disclose ejecting drops at a rate of at least twenty billion drops per second, or the printhead chips together incorporating at least two hundred thousand nozzle arrangements, or between forty and one hundred printhead chips positioned on the carrier.

Matsumoto et al. does not disclose a feed mechanism positioned on the support structure for feeding a print medium through the printing zone, the feed mechanism including a media roll for carrying print media to be provided to the printing zone and a take up spool configured to receive printed print media from the printing zone, wherein

Art Unit: 2853

the feed mechanism is positioned on the support structure so that the take up spool is located beneath the media roll, wherein the feed mechanism is positioned on the support structure so that the media roll is located between the take up spool and the carrier.

Matsumoto et al. does not disclose a media tray configured to store the media roll positioned between a pair of legs of the support structure.

Oda discloses disclose a feed mechanism positioned on a support structure with legs for feeding a print medium through a printing zone (figs. 2 and 5), the feed mechanism including a media roll (20) for carrying print media to be provided to the printing zone and a take up spool (22) configured to receive printed print media from the printing zone, wherein the feed mechanism is positioned on the support structure so that the take up spool is located beneath the media roll (fig. 4, the take up spool 22 is located under the media roll 20), wherein the feed mechanism is positioned on the support structure so that the media roll is located between the take up spool and the carrier (fig. 2, the media roll is between the support structure near the top of legs 4 and 6 and the take up spool).

The examiner takes official notice that it is well known in the art to provide paper storage in printing devices between the supporting legs, for example, doors near the base of copiers that open to reveal compartments that store print media and the like.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide, in the invention of Matsumoto et al., a larger number of nozzle arrangements, such that at least twenty billion drops per second may be ejected.

The reason for performing the modification would have been to select the number of nozzle arrangements and print head chips to provide the desired size, number of pixels and resolution (column 6, lines 23-26).

It would have been obvious to one having ordinary skill in the art at the time of the invention to provide the media feed mechanism and support structure of Oda to support the print head structure of Matsumoto et al. for the purpose of enabling feed of a roll paper while preventing the paper from being caught in a roller (abstract) and to further provide a media tray for storage between the legs of the support structure so as to provide a way to store media conveniently in the printer housing.

Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. in view of Oda as applied above and further in view of Fabbri (U.S. 6,068,367).

Matsumoto et al. disclose CMOS driver circuitry on each printhead chip which functions as control circuitry (fig. 2, element 38, column 7, lines 28-31 and 41-45).

Matsumoto et al. further discloses a micro electromechanical system since the device converts electrical energy into mechanical energy to propel and ink droplet, and the device structure is on the micro scale.

Matsumoto et al. as modified by Oda do not expressly disclose control circuitry and CMOS driver circuitry provide on each printhead chip.

Fabbri discloses providing extensive control circuitry in addition to driver circuitry on each printhead chip in a page width printer (column 5, lines 36-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to, in the invention of Matsumoto et al., further provide control circuitry on each printhead chip. The reason for performing the modification would have been to, as taught by Fabbri, simplify the structure of the lines used to connect the printhead chips (column 5, lines 55-57).

Response to Arguments

Applicant's arguments filed 18 December 2007 have been fully considered but they are not persuasive.

Applicant argues that Matsumoto cannot provide a number of nozzles for the ejection of at least one billion drops per second since this would result in a printhead of impractical proportions that would not be technically feasible due to the size of the nozzle assemblies.

However, the claims do not recite specific structure of the printer that enables it to print the claimed number of drops per second.

Further, applicant's disclosure states that each nozzle arrangement is 32 microns wide and Matsumoto et al. discloses nozzles that are 21 microns apart (column 1, line 41). Since Matsumoto et al. discloses nozzles at a pitch smaller than applicant's the nozzles surely can be provided in such a number as to enable the ejection of the claimed number of drops per second.

Applicant argues that the MEMS technology enables the high ejection rates. Applicant has not claimed any printhead structure that is not taught by Matsumoto.

Further, Matsumoto's nozzles are in the micron scale, convert electrical heating energy to mechanical energy by causing boiling of ink, and thus are MEMS devices.

The structure of the feed mechanism not found in Matsumoto is disclosed by Oda.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 10:00a.m.-6:30p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Julian D. Huffman/
Primary Examiner, Art Unit 2853